

Message Text

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ACTION OES-05

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FOLLOWING TEL SENT ACTION AEC GERMANTOWN 9 DEC 74 AND REPEATED
FOR YOU.

QUOTE

PASS TO F.O. BARANOWSKI, PMM; H.H. BROWN, DR; J. CONNOR, OPA;
A. S. FRIEDMAN, DIP; T.A. NEMZEK, RRD; F. PITTMAN, WMT.

E.O. 11652: N/A

TAGS: TECH, GW

SUBJECT: LWR FUEL REPROCESSING - GERMANY

1. FOLLOWING INFORMATION ABOUT GERMAN REPROCESSING ACTIVITIES
OBTAINED MAINLY THROUGH INFORMAL DISCUSSION.

2. INTEGRATED FUEL CYCLE FACILITY - A SITE FOR THE FIRST GERMAN
INTEGRATED FUEL CYCLE FACILITY HAS BEEN CHOSEN. THE EXACT LOCATION
IS CONFIDENTIAL, BUT THE COMPLEX IS TO BE SITUATED ABOVE A SALT
MINE (NOT THE ASSE MINE IN NORTH-CENTRAL GERMANY). ALKEM WILL
CONSTRUCT A PLUTONIUM FUEL FABRICATION FACILITY, PROBABLY ABOUT
30 TON/YEAR CAPACITY, AT THE SITE. THE PROPOSED 1500 TON/YEAR
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KEWA REPROCESSING PLANT WILL ALSO BE LOCATED AT THE FACILITY. A

WASTE TREATMENT PLANT, BASED UPON VERA-III WHICH WILL BE CONSTRUCTED ADJACENT TO THE WAK REPROCESSING PLANT AT KARLSRUHE, EMPLOYING WASTE DISPOSAL IN THE SALT MINE WILL COMPLETE THE INSTALLATION. SITE WORK WILL BEGIN IN 1976. THE REPROCESSING PLANT IS SCHEDULED FOR COMPLETION BY 1985.

3. WAK FUEL REPROCESSING FACILITY - THE 35 TON/YEAR WAK REPROCESSING PLANT AT KARLSRUHE WHICH WAS TO BE THE PROTOTYPE OF THE LARGER KEWA PLANT, IS NOW FULLY OPERATIONAL AND IS CURRENTLY PROCESSING OXIDE FUEL. AFTER FINAL CLEAN-UP OPERATIONS ARE COMPLETED AT THE EUROCHEMIC PLANT IN BELGIUM THE WAK FACILITY WILL BE THE ONLY OPERATING OXIDE REPROCESSING PLANT. A SIX MONTH CAMPAIGN TO REPROCESS 15 TONS OF OXIDE FUEL FROM THE HDR, VAK AND MZFR REACTORS BEGAN MID-OCTOBER. MAXIMUM FUEL BURNUP IS 19,500 MWD/T. CURRENT OPERATION IS ON A FOUR-SHIFT SCHEDULE, INCLUDING WEEKENDS.

ALTHOUGH THE WAK FACILITY WAS DESIGNED IN 1967 TO BE THE PROTOTYPE OF THE 1500 TON/YEAR KEWA PLANT, EXTENSIVE REVISIONS ARE BEING CONSIDERED FOR THE LARGER FACILITY. THE WAK PLANT USES MIXER-SETTLERS FOR INITIAL EXTRACTION. HOWEVER, SOON AFTER START-UP THREE YEARS AGO, IT WAS OBSERVED THAT THIS PROCESS WAS NOT SUITABLE FOR HIGH BURN-UP OXIDE FUEL. FOR THIS REASON, REPROCESSING OPERATIONS ARE CURRENTLY LIMITED TO POWER REACTOR FUELS OF LESS THAN 20,000 MWD/T BURNUP. TO INCREASE THIS CAPABILITY, THE FIRST MIXER SETTLER IN THE PRESENT PLANT WILL BE REPLACED BY A PULSED COLUMN. THIS MODIFICATION IS SCHEDULED AFTER THE PRESENT REPROCESSING CAMPAIGN IS COMPLETED ABOUT MID-1975. IT IS ANTICIPATED THAT THIS WILL ALLOW OPERATION WITH 3 PERCENT ENRICHED FUEL WHICH HAS BEEN SEEN BETWEEN 30,000 MWD/T AND 40,000 MWD/T BURNUP. THIS CHANGE IN THE WAK PLANT IS BASED UPON DEVELOPMENTS AT EUROCHEMIC AND MARCOULE (A PULSED COLUMN BY-PASS IS TO BE INSTALLED IN PARALLEL WITH THE RAPID CONTRACTOR CENTRIFUGES AT THE LA HAGUE PLANT). THE 1500 TON/YEAR KEWA PLANT WILL ALSO EMPLOY A FIRST CYCLE PULSED COLUMN. BESIDES CHANGES IN THE EXTRACTION PROCESS, THE PRESENT WAK SINGLE PIN CHOPPING OPERATION WILL BE REPLACED IN THE LARGER PLANT BY A HIGHER THROUGHPUT PROCESS. HIGH LEVEL WASTE TREATMENT FACILITIES FOR THE WAK PLANT AS WELL AS FOR THE LARGER PLANT ARE ALSO NOT WELL DEFINED. A 200 CUBIC METER MEDIUM AND HIGH LEVEL LIQUID WASTE STORAGE FACILITY IS PRESENTLY UNDER CONSTRUCTION AT THE WAK SITE. THE INSTALLATION

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WILL BE USED UNTIL AN ADEQUATE SOLIDIFICATION TREATMENT FACILITY BECOMES AVAILABLE. ACTUALLY, FUNDS ARE AVAILABLE FOR CONSTRUCTION OF A HIGH LEVEL WASTE TREATMENT PLANT, VERA-III, AT THE SITE AND A LICENSE HAS BEEN APPLIED FOR. VERA-III WILL NOT BE THE PROTOTYPE FOR A COMMERCIAL PLANT BUT RATHER WILL BE OF A FLEXIBLE DESIGN TO ALLOW FOR RESEARCH AND DEVELOPMENT, PARTICULARLY OF THE VITRIFICATION PROCESS. THE PLANT WILL BE ABLE TO HANDLE

THROUGHPUTS FROM A 150 TON/YEAR REPROCESSING PLANT, THAT IS, FOUR TIMES THE WAK CAPACITY.

4. PLUTONIUM AVAILABILITY - THE WAK PLANT HAS A CAPABILITY FOR PRODUCING A MAXIMUM OF 200 KG/YEAR OF FISSIONABLE PLUTONIUM. THIS WILL NOT BE ADEQUATE FOR LMFBR PROGRAM NEEDS. HOWEVER, A SUFFICIENT PLUTONIUM IS AVAILABLE FOR THE FIRST CORE OF SNR-300 AND IT IS HOPED THAT PLUTONIUM FOR THE RELOAD CORES WILL BECOME AVAILABLE FROM UNITED REPROCESSORS IF EITHER THE WINDSCALE OR LA HAGUE PLANTS BECOME OPERATIONAL IN 1976 AS EXPECTED. THE PLUTONIUM RECYCLE PROGRAM IN GERMANY, WHICH WILL INCLUDE RELOADS IN OBRIGHEIM, GUNDREMMINGEN IN 1975 AND PROBABLY STADE IN 1976 SHOULD NOT BE AFFECTED BY A SHORTAGE OF PLUTONIUM. SUPPLIES HAVE BEEN GUARANTEED FROM EXISTING REPROCESSOR STOCKPILES DUE TO COMMITMENTS CALLED FOR IN PREVIOUS REPROCESSING CONTRACTS. GREENWALD UNQUOTE GREENWALD

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